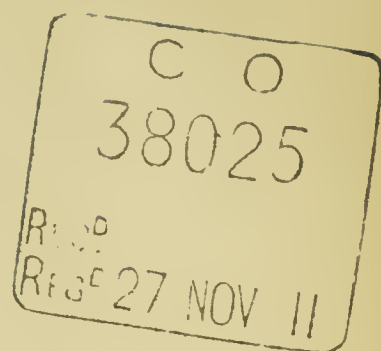


Nyasaland Protectorate.



ANNUAL REPORT

ON

THE MEDICAL DEPARTMENT

FOR

THE YEAR ENDED 31ST MARCH, 1911.


Published by command of His Excellency the Governor.



ZOMBA.

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Nyasaland Protectorate.



MEDICAL DEPARTMENT.

ANNUAL MEDICAL REPORT FOR THE YEAR ENDED 31ST MARCH, 1911.

1. ADMINISTRATIVE.

STAFF.—Medical Staff, Nyasaland, 1910-11 :—

1 Principal Medical Officer : H. Hearsey.

7 Medical Officers : A. H. Barclay, P. Wykesmith, J. E. S. Old, J. B. Davey, H. S. Stannus, J. O. Shircore, E. A. Pask.

1 Temporary Medical Officer : M. Sanderson.

5 Nursing Sisters : R. Paterson (Matron, Zomba), A. M. Tadman, A. A. Pallot, M. Byerley, H. Lawrence.

6 Indian Sub-Assistant Surgeons :—3 in Military employment, 1 in Civil employment, 1 on Sleeping Sickness duty.

The Principal Medical Officer has proceeded on leave and A. H. Barclay has been appointed to act for him.

Drs. Wykesmith and Pask have intimated their intention of resigning their appointments and new appointments have been asked for to replace them. Dr. Sanderson has been placed on the Staff.

Three new Medical Officers arrived at Chinde on the 29th March, 1911, but their services were not available during the past year. There are now therefore 1 P. M. O. and 9 Medical Officers available (Dr. Wykesmith and Dr. Pask having resigned).

H. E. the Governor has asked that the staff be increased to 1 P.M.O. and 11 Medical Officers. This, in my opinion, is the least number possible for efficient medical control, and even this leaves no margin for officers on leave.

TABLE I.

MEDICAL STAFF, NYASALAND, 1910-11.

Principal Medical Officer :

H. Hearsey.

Medical Officers :

A. H. Barclay.	J. O. Shircore.
* P. Wykesmith.	† E. H. A. Pask.
J. E. S. Old.	M. Sanderson.
J. B. Davey.	‡ N. J. Watt.
H. S. Stannus.	‡ D. Drew.

‡ R. Drummond.

Nursing Sisters :

R. Paterson.	A. A. Pallot.
A. M. Tadman.	M. Byerley.
H. Lawrence.	

Sub-Assistant Surgeons : Seconded from I. M. S.

Bir Singh.

Gurmukh Singh.	Suleiman Gulab.
Pir Bakhsh, Khan Sahib.	Varyam Singh.

* Resigned 6th June, 1911.

† Resigned 10th May, 1911.

‡ Arrived Chinde 29th March, 1911.

TABLE II.
FINANCIAL RETURN, 1910-11.

EXPENDITURE.							£4,927	5	7
Personal Emoluments, Europeans							590	14	7
" " Sub-staff	...	...	...	...			362	4	10
Travelling	...	...	...	...	...		1,088	13	5
Passages	...	...	...	...	...		527	8	0
Stores	...	...	...	...	...		201	9	5
Hospital and Dispensary Upkeep				...	...	...	239	13	9
Incidental and Extraordinary				...	...	...	41	18	9
Lunatic Asylum	...	...	...	...	...	...	818	18	2
Sleeping Sickness	...	...	...	...	...	...	57	17	10
Small-pox	...	...	...	...	...	...	£8,856	4	4
RECEIPTS.							83	15	3
Hospital Receipts	...	...	...	...	...
(Unofficial patients).									

TABLE III.
RETURN OF STATISTICS OF POPULATION FOR THE YEAR 1910-11.

	Europeans and Whites	Africans	East Indians	Chinese	Afghans	Arabs
Number of inhabitants 1910-11	765	969,183	474	2	4	1
Number of Births 1910-11	21	no record	1			
Number of Deaths 1910-11	9	no record	3			
Number of Immigrants 1910-11		no record				
Number of Emigrants 1910-11		no record				
Number of inhabitants 1909-10	587	922,313	433	2	4	1
Increase or Decrease	178	46,870	41			

There has been a well marked increase in the population, European, Indian and Native. The deaths recorded of Europeans and Indians are one less each than the previous year and give a death-rate respectively of 11·76 and 6·32 as compared with 17·03 and 13·79 per mille for the year 1909-10. There were 21 births amongst Europeans as compared with 18 in the previous year, giving a birth-rate of 27·45 per thousand. One Indian birth is recorded. For Africans no vital statistics are available.

II. PUBLIC HEALTH.

A.—GENERAL REMARKS.

(I).—GENERAL DISEASES:—

In this Protectorate what are classed as general diseases are not very common with the exception of rheumatism and perhaps neurasthenia. The former is probably largely accounted for by the damp climate and great changes of temperature more especially in the hills. There are few Europeans who escape an attack in one or other of its forms.

Amongst Indians and Natives it is extremely common and often difficult to shake off. Reference to the returns will show that it is much the commonest general disease amongst natives. The muscular type is most frequently encountered but sciatica and chronic joint affections also occur. Neurasthenia is a well recognized sequela of malaria and residence in hot damp relaxing climates: in some cases overwork and worry in connection with their official duties has had a part in the production of neurasthenia: and I think insufficient nutrition from badly cooked food is also a factor, and once a neurasthenic condition is produced is certainly a factor in maintaining it. We cannot alter climatic conditions but the others, overwork and worry and malnutrition, are being largely eliminated.

The native does suffer from a type of neurasthenia, but not to the same extent as Europeans

Scurvy of a generally mild type is fairly common amongst natives: in contiguous territories it appears to be of a severe type.

B.—COMMUNICABLE PELLAGRA.

Dr. H. S. Stannus has called attention to an outbreak, amongst the prisoners in the Central Prison, Zomba, of a disease known to natives as chocho which appears to very closely resemble pellagra if not to be identical with it. The characteristic skin lesions followed later in many cases by paresis points to pellagra, and as we have in the Protectorate more than one species of simulium this must be classed at any rate as a disease of the pellagra type.

Malaria.—Malaria continues to be the commonest disease amongst all classes of the community. The Returns in this disease cannot be considered at all accurate as, especially in the more unhealthy stations, Europeans and Indians long resident are in the habit of treating themselves and only calling in a medical man when untoward symptoms occur. In the adult native the disease is easily dealt with, but with young children the case is different and I believe it causes a heavy mortality: their spleen index is significant.

The common parasite is the malignant tertian though the benign tertian also occurs. The quartan parasite I have only seen in a very few cases of malaria from India. The incidence of this disease corresponds with that of previous years, *viz.*, in the rains and especially at the end of them when the cold weather sets in. The rainy seasons differ as to onset and dispersal on the different levels, and the incidence of malaria corresponds. Of blackwater fever, the connection between which and malaria is I think universally recognized in Nyasaland, I have only the record of 3 cases treated by Government Medical Officers, of which 2 proved fatal. Dr. Caverhill of the Blantyre Mission reports 2 cases with 1 death. One official died from blackwater at Ngara, and his case leads me to the question of prophylaxis routine quinine taking.

The official mentioned resolutely refused to take quinine as a prophylactic and also refused to use a mosquito net, and I attribute his unfortunate death entirely to these circumstances. As there are still a number of officials in the Protectorate who decline routine prophylactic quinine I have asked His Excellency the Governor to issue a circular to the effect that officials who refuse to take this precaution and suffer in consequence from malaria will find themselves liable to permanent invaliding out of the service. This, I understand, is to be done. I understand that all new appointments are made subject to the candidates agreeing to take routine quinine. If I am not correctly informed then I recommend that all such new appointments be subject to this proviso, and that this be made clear to the candidates concerned. I would further recommend the periodical dosing of such natives as must live on the premises, such as personal servants. In my own case my personal boys come regularly for their quinine, and do not require me to remind them. Many natives who have been in touch with Europeans realize the value of quinine and come to ask for it.

Further questions of prophylaxis I will deal with under sanitation.

Small-pox.—The S. Nyasa district is the only one where an outbreak has occurred during the year. This occurred during the cold months of the year and arose from two cases, one of which died, which I entirely failed to trace to their source: it is likely enough they got infected from clothing secreted during the previous years epidemic.

On the occurrence of these a Yao chief in the district vaccinated 70 children with variolous matter before I got to hear of the outbreak. For this he was duly punished. In spite of the fact that the district was well vaccinated the previous year 236 cases occurred with 25 deaths, mostly of infants. This is less than half the death-rate of the previous year. The district was re-vaccinated and the disease confined to 4 villages clustered together and was readily controlled.

The calf lymph supplied by the Lister Institute of Preventive Medicine continues to give complete satisfaction. Vaccination is proceeding systematically, 24 native vaccinators being employed under the supervision of Medical Officers and District Residents. I append a list of vaccination done in the various districts. It is right, however, to point out that with native vaccinators probably some reported successful vaccinations may be mere pus infections. In the Dowa sub-district of Angoniland I have stopped all vaccination on account of the epidemic of trypanosomiasis, as I do not consider arm to arm vaccination safe under these conditions. The natives are much more amenable to the vaccination laws and not infrequently ask for it themselves. With the exception of the Mombera's district of Northern Angoniland I do not think there has been any serious difficulty in this connection. In the Mzimba district I think the failures may be put down to obstreperous natives washing the lymph out immediately they have been vaccinated. In Mlanje I think defective methods must have been employed.

VACCINATION RETURNS, 1910-11.

Station.	Successful.	Modified.	Failed.	Unseen.
Ncheu	1,508	144	18	77
Liwonde	4,050	290	180	972
Fort Johnston ...	15,166	1,935	1,123	335
Zomba	5,403	459	104	2,242
Camp, Zomba ...	882	204	437	186
Blantyre	12,957	2,681	1,258	0
Chiromo	9,521	123	148	0
Chintechi	2,105	0	631	0
Mzimba	12,969	1,428	5,984	574
Mlanje	1,954	834	5,984	3,767
Neno	3,032	0	171	0
Mlangeni	3	1	3	1
Mangoche	60	17	17	0
Fort Manning ...	133	27	26	1

VACCINATED BUT RESULT NOT REPORTED.

Dowa	5,282	Lilongwe	31,732
Marimba	80,137	Port Herald	500

Varicella.—Sixteen cases of varicella occurred amongst the troops at the Camp, Zomba. Two other cases were reported from other districts.

Measles.—A few odd cases of measles were reported. There is however a good deal of it amongst natives which one does not see. In Europeans it mostly occurs amongst those who have the most intimate dealings with natives such as Residents and Missionaries.

Enteric Fever.—One case which was mild occurred at Fort Johnston. Another, a European resident in Nysaland, died of it in Chinde: this case probably contracted the disease here.

Dysentery.—As usual there have been a number of cases of dysentery. One European official died of liver abscess, presumably the result of dysentery. In this connection two cases of liver abscess are reported in natives, one with recovery in Zomba, and the other with fatal results in Fort Johnston. As usual the greatest incidence of the disease follows the first rains and a lesser incidence occurs during the height of the dry season when water supply is scanty, stagnant, and easily fouled. Dr. Davey, Medical Officer, Blantyre, in his report states that he believes most of the dysentery in Nyasaland is of a nonamoebic type, and is probably caused by irritating food stuffs, etc.

Diarrhoea.—This disease pretty closely follows dysentery in its incidence. Most of it, I believe, to be infective though other cases are caused by irritating food stuffs such as raw rice. I have seen severe diarrhoea apparently due to the presence of *ascaris lumbricoides*.

In the prevention of enteric, dysentery, diarrhoea and other water borne diseases sanitation is of the first importance, and will be dealt with later.

Pneumonia.—This disease does not appear to have been so prevalent as usual, nor to have been of a particularly virulent type. It occurs mostly in cold damp weather.

Beri Beri.—Of this disease 9 cases occurred amongst the troops and prisoners at the Camp, Zomba. An epidemic occurred along the S. W. arm of Lake Nyasa and also, to a minor extent, on the eastern shore. Of the 15 cases admitted into Fort Johnston Hospital none died, and with two exceptions I should describe them as mild.

During the epidemic a proportion of natives certainly died, but the actual number I could not ascertain. Some of the cases appeared to be typical beri beri with oedema, heart symptoms and peripheral neuritis: others, and some of these died, showed little but the oedema. This has made me think whether some of these cases would not be better described as epidemic dropsy. Numbers of these cases were searched for trypanosomes, always with a negative result. The seasonal incidence occurs in the latter months of one year and the earlier of the next: it is associated in my mind with the appearance of a tabanus which I have not found before nor elsewhere.

Leprosy.—Leprosy of both types occur, but I think the anaesthetic is much the commoner and perhaps the mixed type still commoner. I have not noticed the nodular type display itself in such a marked degree as it appears to in other climates.

I think it occurs in every district but is more commonly met with on the lake level. In some few cases segregation is said to be practiced but it is not strict. On the other hand natives recognise that it is dangerous and in the case of married couples, though occupying the same hut, coitus does not take place between them. Owing to this a case of suicide occurred at Fort Johnston during the year. The Yao I think treat lepers well, but I have doubts as to whether the Angoni do not make away with them: this would account for the infrequency of their occurrence amongst them. Segregation is not practiced by this administration.

Yaws (Framboesia) is commonest on the lake level but occurs throughout the Protectorate. A few cases present themselves annually for treatment.

Syphilis is common and on the increase. Dr. Davey the Medical Officer, Blantyre, reports a large increase in the number of his cases, both European and native, and has recommended that a Lock Hospital be erected and compulsory segregation practiced. This is the only way to deal with it as the native considers himself cured as soon as the initial symptoms disappear and does untold damage. This has been represented to His Excellency the Governor and action will be taken.

Tick Fever is spreading. This is probably accounted for by the natives doing a great deal more travelling than some years ago and carrying the nkufi tick (*O. moubata*) with them. In one European case I found typical facial paralysis as described in Uganda.

Filariasis and Elephantiasis are uncommon except in the North Nyasa district. I have seen only one case in two years at Fort Johnston, and this is the only one reported.

Helminthiasis.—One case of ankylostomiasis is reported terminating fatally. I have found the ova but it does not appear to be a factor in the death rate.

Taenia.—These are not common but do occur.

Ascaris Lumbricoides is no doubt common but we do not see much of them. I have reported a severe case of diarrhoea apparently due to this worm.

Oxyuris Vermicularis.—One case is reported.

Bilharziosis is common especially in the lower river districts. I am informed that on the Zambesi it is not infrequently found as a fatal rectal infection. Bladder infections most natives treat lightly. I believe some skin affections I have seen but was unable to diagnose may have been due to this parasite.

The European Hospitals are efficiently staffed and excellent work done. For the proper carrying on of the Native Hospitals I am of opinion that each Medical Officer should have an Indian Sub-Assistant Surgeon attached to him, so that in the event of his having to travel and leave his hospital and native patients the work might be carried on by an intelligent assistant. Natives do

not like being left to the care of other Africans and frequently will not submit to it. Further the appointment of Indian Sub-Assistant Surgeons would enable Medical Officers in out-stations to do much more surgery, and also free them from much clerical work so that they might do more research work. I trust this suggestion may receive consideration.

B.—OFFICIALS. European.

Two officials have died during the year one of liver abscess at Port Herald and the other on duty (P.W.D.) at Ngara, Marimba district, of blackwater fever. Two have been invalided out of the country, one for a heart affection and the other for albuminuria with complications. Another official suffered from septic poisoning due largely to his run down condition but eventually made a good recovery. Another has been recommended for a change of station from the lake level to the hills on account of myocarditis.

Trypanosomiasis.—I regret to report a considerable increase in this infection. I cannot help expressing the opinion that had the seriousness of this question been more fully realised before this year something more might have been done to check it. I do not think the representations made by this department were properly appreciated till recently, and now I fear we must consider trypanosomiasis endemic and likely to spread to a serious extent. Energetic measures are now in force which I will detail later.

Since the first case of trypanosomiasis was discovered by Dr. J. B. Davey, then on Sleeping Sickness duty at Chinteché, W. Nyasa district, on the 25th October, 1908, we have had in all 42 cases in which trypanosomes have been found: I say this latter advisedly, for there have been a number of other cases in which examination has proved negative but which have died with all the symptoms of trypanosomiasis as found in Nyasaland, some of which have been reported by Dr. Sanderson and others by natives.

Of these cases.—

No. I has been discharged apparently cured. From the first trypanosomes were very scanty and he was put under a full course of atoxyl. For two years no Medical Officer was able to find a single trypanosome in spite of repeated searching after centrifuging. The boy appeared to be in rude health, and during the year he was under my care never had a day's illness. He was accordingly discharged and a request sent to the Livingstonia Mission to instruct their Medical Officers to keep an eye on him.

No. II died on the way home. The late Capt. Hardy, R.A.M.C. had entered the Congo and been bitten by *G. palpalis*. As Capt. Hardy had several times written to me of severe attacks of malaria, which later he came to think were not malaria but tick fever, I firmly believe that he was infected in the Congo. He visited the Loangwa and Domira Bay after this and in Domira Bay had another severe attack, and I think it is quite possible that Capt. Hardy himself was the innocent source of infection in these two districts.

No. III, who came from Marimba district, died in August, 1909.

No. IV died in Blantyre Hospital. He came from Upper Shire district.

No. V also came from Upper Shire district and died in Blantyre.

No. VI and VII, from Mombera's district, went to N. W. Rhodesia and were there found to be the subjects of human trypanosomiasis: my last information concerning them was that they were in fair health.

No. VIII, Mr. Phillips, has died. He might have been infected in Nyasaland but the facts seem to point to the Loangwa valley.

No. IX, found near Zomba by Dr. Stannus, came from West Nyasa and died here.

No. X, a native teacher, died at Kasungu in the Marimba district. Probably infected in Nyasaland but had visited the Loangwa valley.

No. XI, from near Domira Bay, died at Mvera. No doubt locally infected.

No. XII, the Rev. Paul H. Roux. This case had never been out of Nyasaland into any other infected country. At first trypanosomes were very plentiful (10-12 per field). When Mr. Roux passed through Fort Johnston in the care of Dr. Murray of the Dutch Reformed Mission I could only find one trypanosome to the slide. This count was confirmed by Dr. Stannus, Zomba. Mr. Roux was first treated with atoxyl and then with somaine, receiving grs. x on two consecutive days per week which he stood well. I have since heard from Dr. Murray that he is reported as improving in South Africa to which he returned. It ought to be noted that this case was diagnosed during his first pyretic attack. Mr. Roux was badly bitten by *Glossina morsitans*, and one bite inflamed badly and caused the enlargement of one of the posterior cervical glands. This case placed beyond doubt the endemicity of the disease in Nyasaland.

No. XIII died at Dowa.

No. XIV died at Dowa.

Nos. XV, XVI, XVII, all died before admission to hospital.

Nos. XVIII and XX are reported as greatly improved.

No. XIX is dead.

No. XXI is in a very grave condition and expected shortly to die.

No. XXII, Robin, a P. W. D. carpenter, was sent to Dr. Prentice by Dr. Old for diagnosis (the latter had no microscope with him). Dr. Prentice found trypanosomes. This was not confirmed by Dr. Sanderson who reports an apparent complete recovery. In the meantime inoculation experiments are being carried on to determine whether this man is free of trypanosomes.

Nos. XXIII and XXIV. Prognosis hopeless.

No. XXV has died (suddenly).

No. XXVI died before admission.

No. XXVII. Prognosis bad.

Nos. XXVIII, XXIX, and XXX, died before admission.

Nos. XXXI and XXXII. Prognosis bad.

No. XXXIII died before admission.

No. XXXIV. Prognosis bad.

Here Dr. Sanderson reports :

Dzama: died: autoagglutination of the red corpuscles persistent though no trypanosomes. And three other cases have died which present autoagglutination but no trypanosomes found.

No. XXXV died.

Nos. XXXVI, XXXVII, XXXVIII, XXXIX, XL and XLI. These five cases are reported by wire by Dr. Sanderson, but I have not yet received any further information.

No. XLII. This case was reported from Fort Johnston by Dr. Drummond. The boy was Mr. H. N. Tate's cook and had travelled down from Fort Jameson through the infected area. He has been sent to Dr. Sanderson.

From No. XII onwards there is no doubt whatever that all were infected in Nyasaland. We have here 3 species of *Glossina*, two of which are found in the area affected *viz*; *G. fusca* and *G. morsitans*. The third *G. pallidipes*, an ill defined species, is not apparently found there. I note also that what we have usually termed *G. fusca* is now determined as *G. brevipalpis*. *G. palpalis* has been searched for by all Medical Officers and also by Mr. S. A. Neave and has not been found: we may therefore conclude that it is not present, or if it is present it must be so in such small numbers as not to play any part in the present epidemic.

On the other hand it is the unanimous opinion of the medical men of Nyasaland that *G. morsitans* is the vector. It is true that *G. brevipalpis* (*fusca*) occurs but it is nowhere plentiful, whereas *G. morsitans* is very plentiful and as Dr. Meredith Sanderson, the Medical Officer in charge of Sleeping Sickness Operations, points out the number of *G. Morsitans* and the incidence of Sleeping Sickness cases bear a direct ratio to each other. The further question as to whether the human trypanosome of Nyasaland is *T. Gambiense* or *T. Rhodesiense* can I believe only be determined by a properly staffed and equipped commission. For this reason it appears to me that this administration made a great mistake when they did not avail themselves of the services of Dr. Alan Kinghorn in 1908 when he was desirous of conducting experiments as to whether *G. morsitans* was a vector of the human trypanosome in N. E. Rhodesia or not. If the trypanosome is a new species there does not appear to be any reason why *G. morsitans* should not be the vector as it is of others.

If not then possibly under differing conditions *G. morsitans* may have become a vector and this might account for the virulent nature of the infection in Nyasaland. In any case we are now face to face with a crisis, not only from the public health point of view, but also from the commercial as some of the best native labour sources of the Protectorate will have to be closed. H. E. the Governor has asked that a Commission be appointed to determine the question as regards both the trypanosome and its vector. I learn, however, that this has not been granted and that we are to have the services of an Entomologist only. The bionomics of *G. morsitans* certainly require elucidation, owing to its enormous increase in the Protectorate, not only in districts where game has recovered from rinderpest and is plentiful, but also in those where game is practically non-existent and where 10 years ago it was plentiful. It has been said that *G. morsitans* was always present but had been overlooked: this I do not think is the case, but even if it were then why this enormous increase in numbers in districts where game was plentiful but now does not exist. I think it will be found that natives travelling spread fly, and I also believe that fly has adapted itself to new conditions and learned to make use of man as its ordinary food where game used to supply its needs.

I would suggest that Dr. Alan Kinghorn be asked to proceed to Nyasaland and conduct the necessary experiments to settle the questions at issue as soon as he can be spared from the commission in N. E. Rhodesia. I fear that there is now no doubt that Nyasaland is heavily infected and I anticipate the spread of the infection in a southerly direction towards Liwonde, belts of fly are practically continuous from the present area of infection to Liwonde and Mpimbi and I can see no reason why Sleeping Sickness should not follow them.

Originally the Dutch Mission were approached with a view to forming a hospital at their station of Mvera. This was formed and patients were treated there. It has now however been deemed more expedient to form a Sleeping Sickness Camp in a more central district, and this more especially because of the likelihood of the disease spreading south. Dr. Sanderson is therefore now building a Medical Officer's house and a model village on Ngani Hill in centre of the infected area but which is itself free of fly. Here patients will be brought and made as comfortable as possible, their near relatives being encouraged to accompany them.

The area in the Dowa district to be now proclaimed will include all *morsitans* infested country and a belt of 3-4 miles outside it. This will be defined by a broad hoed road.

A census has been made of the Dowa sub-district, and one will now be made of the Dedza district which in as far as it is infested with *G. morsitans* is regarded as certainly infected.

As soon as it is definitely proved that *G. morsitans* is the vector of human trypanosomiasis in Nyasaland it is proposed to move the whole native population out of morsitans infested districts.

In the meantime they are to be encouraged to leave of their own accord.

In the proclaimed area a hut-tax of 3/- will be accepted, and this may be paid in kind.

Dr. Desmond Drew has joined Dr. Sanderson and is at work. From the S. Nyasa district Dr. Drummond will work up towards the known infected area, his duties at Fort Johnston being meanwhile discharged by S. A. S. Varyam Singh.

Till more Medical Officers are appointed I am unable to do more. In this connection I may here say that I hope His Excellency's request that the Medical Staff may be increased to at least 11 Medical Officers besides the Principal Medical Officer may be granted. Dr. Sanderson's method of working has been to train native capitaos to take blood films which are numbered and sent to him: by this means many cases have been found, but as he points out many cases are found only when in a dying state (it will be observed in the list of cases how many have died before admission to hospital) and Medical Officers would probably find the earlier cases.

In view of Col. Sir David Bruce's findings as to game and the human trypanosome in Uganda it is proposed to drive out all game from the morsitans country, and for this purpose natives will be armed.

The movements of natives are controlled by a special Sleeping Sickness Magistrate and a staff of Police.

In the North Nyasa district no Medical Officer is stationed but when more reach us one at any rate will proceed there. In the meantime the borders are patrolled by Police under the charge of the District Resident.

ZOMBA EUROPEANS.

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1st APRIL 1910 TO 31st MARCH 1911.

Diseases.	Remain- ing in Hospital at 1st April 1910.	Yearly Total.		Total cases treated.	Remain- ing in Hospital at 31st March 1911.	Remarks.
		Admis- sions.	Deaths.			
General Diseases :—						
Beri-Beri		
Cerebro-Spinal Fever		
Chicken-Pox		
Cholera		
Dengue		
Diphtheria		
Dysentery	...	4		4		
Endocarditis—Infective		
Enteric		
Erysipelas		
Gonorrhœa	...	2		2		
Influenza	...	12		12		
Kala Azar		
Leprosy (a) Nodular		
(b) Anæsthetic		
Malaria (a) Tertian		
(b) Quartan		
(c) Aestivo-autumnal	...	48		48		
(d) Chronic malaria		
(e) Black-water	...	1		1		
Measles		
Malta Fever		
Plague		
Pneumonia		
Rabies		
Relapsing fever		
Rheumatic fever		
Septicæmia		
Trypanosomiasis		
(Sleeping Sickness)	...	1		1		
Small-Pox		
Syphilis (a) Primary		
(b) Secondary	...	3		3		
(c) Tertiary		
Tetanus		
Tuberculosis	...	1		1		
Whooping cough		
Yaws		
Yellow fever		
Alcoholism		
Morphinism		
Others		
Debility	...	2		2		
Anæmia	...	5		5		
Anæmia, pernicious		
Diabetes		
Exophthalmic goitre		
Gout		
Leucocythaemia		
Hodgkin's disease		
Myxoedema		
Purpura		
Rickets		
Scurvy	...	1		1		
Rheumatism	...	6		6		
Diseases of Nervous System :—						
Neuritis		
Meningitis		
Myalitis		
Hydrocephalus		
Encephalitis		
Abscess of brain		
Congestion of brain		
Apoplexy		
Paralysis		
Chorea		
Epilepsy		
Neuralgia	...	2		2		
Hysteria		
Neurasthenia	...	2		2		
Mental Diseases :—	...	0		0		
Diseases of Eye :—						
Conjunctivitis	...	3		3		
Keratitis	...	1		1		

ZOMBA EUROPEANS.

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1st APRIL 1910 TO 31st MARCH 1911.

Diseases.	Remain- ing in Hospital at 1st April 1910.	Yearly Total.		Total cases treated.	Remain- ing in Hospital at 31st March 1911.	Remarks.
		Admis- sions.	Deaths.			
Diseases of Eye:-- <i>Continued.</i>						
Ulcertaion of cornea		
Iritis ...		1		1		
Optic neuritis		
Cataract		
Diseases of Ear:—						
Inflammation		
Impacted wax ...		1		1		
Diseases of Nose:—						
Rhinorrhoea ...		1		1		
Diseases of Circulatory System:—		0		0		
Diseases of Respiratory System:—						
Laryngitis ...		2		2		
Bronchitis ...		3		3		
Asthma ...		1		1		
Diseases of Digestive System:—						
Stomatitis ...		5		5		
Caries of teeth ...		38		38		
Alveolar abscess ...		1		1		
Tonsillitis ...		4		4		
Gastritis ...		1		1		
Dilatation of stomach ...		15		15		
Dyspepsia ...		2		2		
Enteritis ...		4		4		
Appendicitis ...		1		1		
Duodenal ulcer ...		1		1		
Diarrhoea ...		22		22		
Haemorrhoids ...		2		2		
Prolapsus ani ...		1		1		
Jaundice ...		2		2		
Diseases of Lymphatic System:—		0		0		
Diseases of Urinary System:—						
Bright's disease ...		1		1		
Renal colic ...		1		1		
Haematuria ...		2		2		
Cystocoele ...		1		1		
Diseases of Male Generative Organs:—		0		0		
Diseases of Female Generative Organs, etc:—						
Vomiting of pregnancy ...		2		2		
Confinements ...		5		5		
Endometritis ...		2		2		
Menorrhagia ...		1		1		
Abortion ...		1		1		
Abscess of breast ...		3		3		
Mastitis ...		1		1		
Diseases of Organs of Locomotion:—		0		0		
Diseases of Connective Tissue:—						
Abscess ...		5		5		
Diseases of Skin:—						
Urticaria ...		2		2		
Eczema ...		1		1		
Boil ...		3		3		
Herpes ...		1		1		
Sudamnia ...		1		1		
Injuries:—		28		28		
Surgical Operations:—						
Circumcision ...		1		1		
Retained ovum ...		1		1		
Periphrenic abscess ...		1		1		
Parasites:—						
Oxyuris vermicularis ...		1		1		
Myiasis ...		2		2		

ZOMBA NATIVES.

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1st APRIL 1910 TO 31st MARCH 1911.

Diseases.	Remain- ing in Hospital at 1st April 1910.	Yearly Total.		Total cases treated.	Remain- ing in Hospital at 31st March 1911.	Remarks.
		Admis- sions.	Deaths.			
General Disease :—						
Dysentery ...		73	2	73		
Liver abscess ...		1		1		
Febricula ...		2		2		
Malaria ...		63		63		
General tuberculosis ...		1	1	1		
Syphilis (a) Primary				
(b) Secondary ...		30		30		
(c) Tertiary ...		3		3		
Gonorrhœa ...		6		6		
Varicella ...		2		2		
Measles ...		2		2		
Yaws ...		16		16		
Trypanosomiasis ...		1	1	1		
Tetanus ...		1	1	1		
Muscular rheumatism ...		131		131		
Debility ...		5		5		
Diseases of Nervous System :—						
Meningitis ...		1	1	1		
Hemiplegia ...		1	1	1		
Neuralgia ...		1		1		
Cephalalgia ...		82		82		
Epilepsy ...		1		1		
Paraplegia ...		1		1		
Mania ...		1		1		
Confusional insanity ...		1		1		
Diseases of Eye :—						
Hordeolum ...		2		2		
Conjunctivitis ...		78		78		
Keratitis ...		1		1		
Ulcer of cornea ...		2		2		
Staphyloma ...		1		1		
Perforated wound of cornea ...		1		1		
Cataract ...		2		2		
Amblyopia ...		3		3		
Diseases of Ear :—						
Foreign body in auditory meatus ...		2		2		
Wax in meatus ...		4		4		
Meatitis ...		2		2		
Otitis media suppurativa ...		47		47		
Injury to pinna ...		1		1		
Ear-ache ...		2		2		
Diseases of Nose :— Epistaxis ...		1		1		
Diseases of Circulatory System :—		0		0		
Diseases of Respiratory System :—						
Coryza ...		3		3		
Cough and bronchitis ...		252		252		
Asthma ...		1		1		
Pleurisy ...		13		13		
Pneumonia ...		14		14		
Diseases of Digestive System :—						
Zingivitis ...		4		4		
Toothache ...		4		4		
Dental caries ...		143		143		
Alveolar abscess ...		7		7		
Stomatitis ...		1		1		
Tonsillitis ...		13		13		
Constipation ...		194		194		
Dyspepsia ...		20		20		
Diarrhœa ...		203		203		
Food poisoning ...		2		2		
Gastro-Enteritis ...		1		1		
Intestinal colic ...		65		65		
Vomiting ...		1		1		
Hæmorrhoids ...		2		2		
Umbilical fistula ...		1		1		
Diseases of Lymphatic System :—						
Adenitis ...		6		6		
Diseases of Urinary System :—		0		0		
Diseases of Male Generative Organs :—						
Hydrocoele ...		1		1		
Diseases of Female Generative Organs :—						
Ulcerating granuloma of the leg and pudenda ...		3		3		

Information not available.

Information available in next year's Report.

ZOMBA NATIVES.

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1st APRIL 1910 TO 31st MARCH 1911.

Diseases.	Remain- ing in Hospital at 1st April 1910.	Yearly Total.		Total cases treated.	Remain- ing in Hospital at 31st March, 1911.	Remarks.
		Admis- sions.	Deaths.			
Diseases of Female Generative Organs:— <i>Continued.</i>						
Fibroid of uterus ...		1		1		
Fibroid suppurating with general peritonitis ...		1	1	1		
Diseases of Organs of Locomotion:—						
Tubercular caries of bone ...		4	1	4		
Synovitis ...		2		2		
Ganglion ...		1		1		
Diseases of Connective Tissue:—						
Abscess ...		21		21		
Cellulitis ...		1		1		
Furuncle ...		20		20		
Whitlow ...		11		11		
Superficial wounds ...		93		93		
Bruises ...		15		15		
Blisters and scalds ...		3		3		
Sprains ...		17		17		
Burns ...		33		33		
Diseases of Skin:—						
Scabies ...		128		128		
Jiggers ...		39		39		
Lichen ...		52		52		
Impetigo ...		1		1		
Prurigo ...		1		1		
Ringworm ...		17		17		
Urticaria ...		1		1		
Herpes ...		3		3		
Chocho (Pellagra?) ...		22		22		
Injuries:—		4	1	4		
Fractures and dislocations ...		5		5		
Hæmatoma ...		1		1		
Gangrene ...		2		2		
Ulcers ...		402		402		
Surgical Operations:—						
Minor ...		187		187		
Major ...		11		11		
Poison:—						
Snake bite ...		3		3		
Parasites:—						
Thrush ...		4		4		
Bilharziosis ...		3		3		
Obstructed labour ...		2	1	2		

TROOPS AND PRISONERS.

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1st APRIL 1910 TO 31st MARCH 1911.

Diseases.	Remain- ing in Hospital at 1st April 1910.	Yearly Total.		Total cases treated.	Remain- ing in Hospital at 31st March 1911.	Remarks.
		Admis- sions.	Deaths.			
General Diseases :—						
Varicella ...		16		16		
Measles ...		2		2		
Pertussis ...		1	1	1		
Enteric ...		1		1		
Malaria ...		104		104		
Dysentery ...		31	3	31		
Syphilis ...		11		11		
Gonorrhoea ...		2		2		
Pneumonia ...		9		9		
Beri-Beri ...		5		5		
Intoxications. ...		0		0		
Muscular rheumatism ...		156		156		
Debility ...		13		13		
Headache ...		74		74		
Syncope ...		15		15		
Neuralgia ...		10		10		
Epilepsy ...		3		3		
Mental diseases. ...						
Diseases of Eye :—						
Hordeolum ...		2		2		
Conjunctivitis ...		112		112		
Keratitis ...		2		2		
Iritis ...		3		3		
Diseases of Ear :—						
Wax in ear ...		2		2		
Deafness ...		2		2		
Earache ...		22		22		
Otitis media suppurativa ...		14		14		
Diseases of Nose :—						
Coryza ...		5		5		
Epistaxis ...		1		1		
Diseases of Circulatory System :—						
Valvular diseases of heart ...		1		1		
Diseases of Respiratory System :—						
Bronchitis ...		278		278		
Broncho-pneumonia ...		2		2		
Asthma ...		1		1		
Pleurisy ...		3		3		
Pneumonia ...		9		9		
Diseases of Digestive System :—						
Diarrhœa ...		97		97		
Stomatitis ...		8		8		
Tonsillitis ...		8		8		
Dental caries ...		59		59		
Alveolar abscess ...		3		3		
Parotitis ...		3		3		
Constipation ...		102		102		
Dyspepsia ...		44		44		
Colic ...		42		42		
Growth of liver ...		1	1	1		
Diseases of Lymphatic System :—						
Adenitis ...		14		14		
Diseases of Urinary System :—						
Diseases of Male Generative Organs :—						
Balanitis ...		1		1		
Orchitis ...		3		3		
Diseases of Female Generative Organs :— Mastitis		2		2		
Diseases of Organs of Locomotion :—						
Synovitis ...		7		7		
Diseases of Connective Tissue :—						
Cellulitis ...		30		30		
Diseases of Skin :—						
Eczema ...		42		42		
Pityriasis ...		48		48		
Acne ...		2		2		
Ulcer ...		224		224		
Boil ...		7		7		
Tinea ...		13		13		
Scabies ...		147		147		
Jiggers ...		9		9		
Injuries General :—						
Fractures ...		2		2		
Burns ...		18		18		

TROOPS AND PRISONERS.

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1st APRIL 1910 TO 31st MARCH 1911.

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1st APRIL 1910 TO 31st MARCH 1911.

Diseases.	Remain- ing in Hospital at 1st April 1910.	Yearly Total.		Total cases treated.	Remain- ing in Hospital at 31st March 1911.	Remarks.
		Admis- sions.	Deaths.			
Injuries, General :— <i>Continued.</i>	Information not available.		Nil.		Information available in next year's Report.	
Contusions ...		27		27		
Wounds ...		1,335		1,335		
Abrasion ...		387		387		
Sprains ...		22		22		
Other injuries ...		8		8		
Injuries :—Local.						
None. ...						
Surgical Operations :—						
Nil. ...						
Tumours :—						
Nil ...						
Malformations :—						
Nil ...						
Poisons :—						
Snake and insect bites ...		4		4		
Parasites :—						
Bilharziosis ...		4		4		
Ascaris lumbricoides ...		1		1		

SIKHS.

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1st APRIL 1910 TO 31st MARCH 1911.

Diseases.	Remain- ing in Hospital at 1st April 1910.	Yearly Total.		Total cases treated.	Remain- ing in Hospital at 31st March 1911.	Remarks.
		Admis- sions.	Deaths.			
General Diseases :—						
Simple continued fever ...		45		45		
Malaria ...		79		79		
Splenitis ...		6		6		
Dysentery ...		7		7		
Gonorrhœa ...		1		1		
Rheumatism ...		8		8		
Diseases of Nervous System :—						
Debility ...		4		4		
Headache ...		19		19		
Syncope ...		3		3		
Neuralgia ...		1		1		
Insomnia ...		1		1		
Diseases of Eye :—						
Hordeolum ...		2		2		
Conjunctivitis ...		6		6		
Diseases of Ear :—						
Pain in ear ...		2		2		
Diseases of Nose :—						
Nil ...						
Diseases of Circulatory System :—						
Nil. ...			Nil.			
Diseases of Respiratory System :—						
Coryza ...		26		26		
Bronchitis ...		36		36		
Diseases of Digestive System :—						
Caries of teeth ...		17		17		
Tonsillitis ...		7		7		
Stomatitis ...		7		7		
Dyspepsia ...		39		39		
Constipation ...		27		27		
Jaundice ...		1		1		
Diseases of Connective Tissue :—						
Abscess ...		6		6		
Diseases of Skin :—						
Eczema ...		3		3		
Urticaria ...		16		16		
Boil ...		10		10		
Tinea ...		14		14		
Jiggers ...		15		15		
Injuries :—						
Bruises and sprains ...		39		39		
Abrasions ...		21		21		

CENTRAL ASYLUM, ZOMBA.

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1st APRIL 1910 TO 31st MARCH 1911.

Diseases.	Remain- ing in Hospital at 1st April 1910.	Yearly Total.		Total cases treated.	Remain- ing in Hospital at 31st March 1911.	Remarks.
		Admis- sions.	Deaths.			
Mental Diseases :—						
Mania ...	Information not available.	5		5	Information available in next year's Report.	
Melancholia ...		0		0		
Delusional insanity ...		1		1		
Dementia ...		0		0		
Confusional insanity ...		1		1		

BLANTYRE EUROPEANS.

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1st APRIL 1910 TO 31st MARCH 1911.

Diseases.	Remain- ing in Hospital at 1st April 1910.	Yearly Total.		Total cases treated.	Remain- ing in Hospital at 31st March 1911.	Remarks.
		Admis- sions.	Deaths.			
Dysentery ...		8		8		
Malaria ...		33		33		
Syphilis Primary ...		6		6		
Secondary ...		3		3		
Gonorrhœa ...		4		4		
Blackwater fever ...		2	2	2		
Trypanosomiasis ...		1		1		
Intoxications :—						
Alcoholism ...		1		1		
General Diseases :—						
Anæmia ...		3		3		
Debility ...		2		2		
Rheumatism ...		1		1		
Rickets		
Headache ...		1		1		
Neuralgia ...		2		2		
Neurasthenia ...		1		1		
Diseases of Eye :—						
Conjunctivitis ...		2		2		
Hordeolum ...		3		3		
Entropion ...		1		1		
Diseases of Ear :—						
Simple inflammation of ear ...		1		1		
Diseases of Nose :—						
Coryza ...		1		1		
Foreign body ...		1		1		
Diseases of Respiratory System :—						
Bronchitis ...		12		12		
Asthma ...		1		1		
Pleurisy ...		1		1		
Dyspnœa ...		1		1		
Laryngitis ...		1		1		
Diseases of Digestive System :—						
Dental caries ...		4		4		
Gumboil ...		1		1		
Relaxed throat ...		1		1		
Pharyngitis ...		1		1		
Haematemesis ...		1		1		
Dyspepsia ...		15		15		
Gastralgia ...		1		1		
Diarrhœa ...		5		5		
Constipation ...		2		2		
Fissure in ano ...		1		1		
Haemorrhoid ...		3		3		
Hepatitis ...		1		1		
Diseases of Urinary System :—						
Prostatic abscess ...		1		1		
Pyuria ...		1		1		
Aciduria ...		1		1		
Diseases of Male Generative System :—						
Urethritis ...		1		1		
Circumcision ...		1		1		
Gleet ...		1		1		
Diseases of Female Generative System :—						
Menorrhagia ...		1		1		
Retained placenta ...		1		1		
Abortion ...		1		1		
Pernicious vomiting ...		1		1		
Diseases of organs of Locomotion :—						
Arthritis ...		2		2		
Synovitis ...		1		1		
Diseases of Connective Tissue :—						
Cellulitis ...		1		1		
Obesity ...		1		1		
Diseases of Skin :—						
Eczema ...		2		2		
Sudamina ...		1		1		
Jiggers ...		2		2		
Ulcer ...		3		3		
Injuries :—						
Wound ...		3		3		
Sprain ...		2		2		
Concussion of brain ...		1		1		
Other Injuries ...		6		6		
Malformations :—						
Cleft hand ...		1		1		

Information not available.

Information available in next year's Report.

BLANTYRE NATIVES.

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1st APRIL 1910 TO 31st MARCH 1911.

Diseases.	Remain- ing in Hospital at 1st April 1910.	Yearly Total.		Total cases treated.	Remain- ing in Hospital at 31st March 1911.	Remarks.
		Admis- sions.	Deaths.			
General Diseases :—						
Chickenpox	...	4		4		
Measles	...	1		1		
Pertussis	...	2		2		
Dysentery	...	94	2	94		
Malaria	...	25		25		
Pthisis	...	4		4		
Tuberculous elbow	...	1		1		
Leprosy	...	5		5		
Yaws	...	2		2		
Syphilis: Primary	...	24		24		
.. Secondary	...	1		1		
.. Tertiary	...	7		7		
Gonorrhœa	...	1		1		
Tetanus	...	1	1	1		
Pneumonia	...	1		1		
General Diseases :—						
Debility	...	1		1		
Rheumatism	...	17		17		
Neuritis	...	1		1		
Sciatica	...	1		1		
Menigitis	...	1		1		
Epilepsy	...	1		1		
Headache	...	34		34		
Neuralgia	...	1		1		
Mental :—						
Insanity	...	8	1	8		
Homocidal mania	...	1		1		
Melancholia	...	1		1		
Idiocy	...	1		1		
Diseases of Eye :—						
Conjunctivitis	...	22		22		
Leucoma	...	3		3		
Presbyopia	...	1		1		
Diseases of ear :—						
Inflammation of external auditory meatus	...	20		20		
Wax in ear	...	2		2		
Diseases of Nose :—						
Coryza	...	11		11		
Diseases of Circulatory System :—						
Valvular disease	...	3		3		
Diseases of Respiratory System :—						
Laryngitis	...	3		3		
Bronchitis	...	75	1	75		
Broncho-Pneumonia	...	1		1		
Pleurisy	...	3		3		
Pneumothorax	...	1	1	1		
Diseases of Digestive System :—						
Caries of teeth	...	30		30		
Toothache	...	5		5		
Pyrrhoea alveolaris	...	1		1		
Sore throat	...	1		1		
Tonsillitis	...	4		4		
Diarrhœa	...	129		129		
Gastro-Enteritis	...	2		2		
Dyspepsia	...	11		11		
Constipation	...	78		78		
Colic	...	8		8		
Peritonitis	...	4	2	4		
Diseases of Urinary System :—						
Cystitis	...	1		1		
Pyuria	...	1		1		
Haematuria	...	1		1		
Diseases of Male Generative Organs :—						
Epididymitis	...	1		1		
Orchitis	...	3		3		
Inflammation of scrotum	...	1		1		
Diseases of Female Generative Organs :—						
Dysmenorrhœa	...	2		2		
Mastitis	...	2		2		
Diseases of Connective Tissue :—						
Cellulitis	...	8		8		
Abscess	...	4		4		

BLANTYRE NATIVES.

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1st APRIL 1910 TO 31st MARCH 1911.

Diseases.	Remain- ing in Hospital at 1st April 1910.	Yearly Total.		Total cases treated.	Remain- ing in Hospital at 31st March 1911.	Remarks.
		Admis- sions.	Deaths.			
Diseases of Organs of Locomotion :—						
Arthritis ...		1		1		
Pereostitis ...		2		2		
Diseases of the Skin :—						
Urticaria ...		1		1		
Eczema ...		39		39		
Impetigo ...		5		5		
Herpes ...		2		2		
Acne ...		1		1		
Other diseases ...		3		3		
Ulcers ...		66		66		
Boils ...		3		3		
Tinea ...		7		7		
Scabies ...		49		49		
Jiggers ...		2		2		
Injuries :—						
Abrasions ...		2		2		
Contusions ...		12		12		
Wounds ...		136		136		
Sprains and strains ...		10		10		
Dislocations ...		1		1		
Fractures ...		4		4		
Surgical Operations :—						
Major ...		4		4		
Minor ...		40		40		
Poisons :—Dog bite ...		1		1		
Leopard bite ...		1		1		
Parasites :—						
Bilharziosis ...		1		1		
Ascaris Lumbricoides ...		1		1		
Ankylostomiasis ...		1		1		

FORT JOHNSTON, EUROPEANS.

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1st APRIL 1910 TO 31st MARCH 1911

Diseases.	Remain- ing in Hospital at 1st April 1910.	Yearly Total.		Total cases treated.	Remain- ing in Hospital at 31st March 1911.	Remarks.
		Admis- sions.	Deaths.			
General Diseases :—						
Malaria ...		16		16		
Syphilis : Primary ...		1		1		
Gonorrhœa ...		1		1		
Trypanosomiasis ...		1		1		
Enteric ...		1		1		
Measles ...		1		1		
Tick fever ...		1		1		
Anaemia ...		1		1		
Rheumatism ...		4		4		
Scurvy ...		1		1		
Diseases of the Eye :—Conjunctivitis		1		1		
Iritis ...		1		1		
Diseases of Circulatory System :—						
Myocarditis ...		1		1		
Valvular mitral ...		1		1		
Diseases of Respiratory System :—						
Laryngitis ...		1		1		
Asthma ..		2		2		
Diseases of Digestive System :—						
Zingivitis ...		1		1		
Dental caries ...		3		3		
Gumboil ...		1		1		
Dyspepsia ...		2		2		
Enteritis ...		2		2		
Colic ...		1		1		
Haemorrhoids ...		2		2		
Hepatitis ...		3		3		
Diseases of Lymphatic System :—						
Splenitis ...		2		2		
Diseases of Connective Tissue :—						
Abscess ...		1		1		
Diseases of Organs of Locomotion :—						
Bruisitis ...		1		1		
Diseases of Skin :—Boil ...		3		3		
Ringworm ...		1		1		
Injuries :—Contusions ...		4		4		
Sprain ...		1		1		
Multiple injuries with fractured clavicle (elephant) ...		1		1		
Surgical Operations :—						
Minor amputation, finger ...		1		1		
Excision bursa ...		1		1		
Parasites :—Taenia ...		1		1		
Myiasis ...		1		1		

FORT JOHNSTON NATIVES.

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1st APRIL 1910 TO 31st MARCH 1911.

Diseases.	Remain- ing in Hospital at 1st April 1910.	Yearly Total.		Total cases treated.	Remain- ing in Hospital at 31st March 1911.	Remarks.
		Admis- sions.	Deaths.			
General Diseases :—	Information not available.				Information available in next year's Report.	
Beri Beri		15		15		
Dysentery		14		14		
Gonorrhœa		4		4		
Leprosy		12	1	12		Suicide.
Malaria		50	1	50		
Measles		1		1		
Tick fever		2		2		
Trypanosomiasis		0		0		
Small-pox		236	25	236		
Syphilis: Primary		2		2		
Secondary		6		6		
Tertiary		4		4		
Tuberculosis		0		0		
Pthisis palmonalis		5	1	5		
Yaws		3		3		
Epidemic dropsy		0		0		Unknown.
Anaemia		6		6		
Scurvy		12		12		
Rheumatism		20		20		
Myxoedema		0		0		
Purpura		0		0		
Rickets		0		0		
Functional :—						
Epilepsy		2		2		
Headache		6		6		
Paralysis agitans		1		1		
Mental Diseases :—						
Delusional insanity		1	1	1		
Mania		1		1		
Diseases of the Eye :—						
Conjunctivitis		6		6		
Staphyloma		1		1		
Contusion of eye		3		3		
Diseases of the Ear :—						
Otitis media suppurativa		4		4		
Impacted wax		3		3		
Diseases of Circulatory System :—						
Valvular mitral		1		1		
Diseases of Respiratory System :—						
Bronchitis		125	1	125		
Asthma		1		1		
Broncho-Pneumonia		2		2		
Pthisis palmonalis		5	1	5		Also entered under Tuberculosis.
Diseases of Digestive System :—						
Caries of Teeth		25		25		
Toothache		2		2		
Gumboil		2		2		
Diarrhœa		4		4		
Gastritis		12	1	12		
Dyspepsia		4		4		
Constipation		9		9		
Colitis		36		36		
Hepatitis		2		2		
Hernia		1		1		
Abscess of liver		1	1	1		
Diseases of Lymphatic System :—						
Elephantiasis (mammar)		1		1		
Diseases of Male Generative System :—						
Orchitis		1		1		
Phagadaena		1		1		
Ulcerating granaloma		1		1		
Hydrocele		1		1		
Diseases of Connective Tissue :—						
Abscess		1		1		
Diseases of Organs of Locomotion :—						
Ganglion		3		3		
Myalgia		2		2		
Diseases of the Skin :—						
Eczema		3		3		
Psoriasis		6		6		
Ulcers		74		74		
Boils		4		4		
Tinea		6		6		
Scabies		100		100		

FORT JOHNSTON NATIVES.

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1st APRIL 1910 TO 31st MARCH 1911.

Diseases.	Remain- ing in Hospital at 1st April 1910.	Yearly Total.		Total cases treated.	Remain- ing in Hospital at 31st March 1911.	Remarks.
		Admis- sions.	Deaths.			
Injuries :—	Information not available.		Nil		Information available in next year's Report.	
Burns and scalds		2		2		
Contusions		2		2		
Wounds		39		39		
Sprains		7		7		
Fracture		1		1		
Crocodile bite		1		1		
Surgical Operations :—						
Major		4		4		
Minor		13		13		

CHIROMO EUROPEANS.

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1st APRIL 1910 TO 31st MARCH 1911.

Diseases.	Remain- ing in Hospital at 1st April 1910.	Yearly Total.		Total cases treated.	Remain- ing in Hospital at 31st March 1911.	Remarks.	
		Admis- sions.	Deaths.				
General Diseases :—	Information not available.				Information available in next year's Report.		
Measles ...		1		1			
Dysentery ...		0		0			
Liver abscess ...		1	1	1			
Malaria ...		11		11			
Syphilis : Primary ...		1		1			
.. Secondary ...		2		2			
Gonorrhœa ...		1		1			
Nervous Diseases :—							
Cerebral hæmorrhage ...		1	1	1			
Diseases of Respiratory System :—							
Coryza ...		3		3			
Bronchitis ...	2		2				
Diseases of Digestive System :—							
Dental caries ...	1		1				

CHIROMO NATIVES.

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1st APRIL 1910 TO 31st MARCH 1911.

Diseases.	Remain- ing in Hospital at 1st April 1910.	Yearly Total.		Total cases treated.	Remain- ing in Hospital at 31st March 1911.	Remarks.
		Admis- sions.	Deaths.			
General Disease :—	Information not available.				Information available in next year's Report.	
Dysentery ...		113	5	113		
Malaria ...		105		105		
Syphilis : Primary ...		1		1		
Gonorrhœa ...		3		3		
Pneumonia ...		1		1		
Rheumatism ...		9		9		
Debility ...		7		7		
Diseases of Eye :—						
Conjunctivitis ...		25		25		
Diseases of Ear :—						
Otitis media supp. ...		8		8		
Ear-ache ...		17		17		
Diseases of Respiratory System :—						
Bronchitis ...		131		131		
Pleurisy ...		1		1		
Diseases of Digestive System :—						
Caries of teeth ...		24		24		
Toothache ...		5		5		
Diarrhœa ...		157		157		
Diseases of Connective tissue :—						
Abscess ...		6		6		
Diseases of Locomotory System :—						
Myalgia ...		2		2		
Diseases of Skin :—						
Ulcers ...		144		144		
Boils ...		3		3		
Scabies ...		82		82		
Injuries :—						
Wounds ...		182		182		
Operations :—						
Major ...		1		1		
Minor ...		21		21		

OTHER STATIONS, EUROPEANS.

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1st APRIL 1910 TO 31st MARCH 1911.

Diseases.	Remain- ing in Hospital at 1st April 1910.	Yearly Total.		Total cases treated.	Remain- ing in Hospital at 31st March 1911.	Remarks.
		Admis- sions.	Deaths.			
General Diseases :—	Information not available.	4		4	Information available in next year's Report.	
Malaria						
Diseases of Respiratory System :—		3		3		
Coryza						
Diseases of Digestive System :—		1		1		
Dental caries		1		1		
Jaundice						
Diseases of Skin :—		2		2		
Herpes		1		1		
Ulcer		1		1		
Burn						

OTHER STATIONS NATIVES.

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1st APRIL 1910 TO 31st MARCH 1911.

Diseases.	Remain- ing in Hospital at 1st April 1910.	Yearly Total.		Total cases treated.	Remain- ing in Hospital at 31st March 1911.	Remarks.
		Admis- sions.	Deaths.			
General Diseases :—						
Dysentery	...	34		34		
Malaria	...	53		53		
Syphilis : Primary	...	1		1		
Tick fever	...	11		11		
Pneumonia	...	11		11		
Rheumatism	...	46		46		
Debility	...	2		2		
Headache	...	57		57		
Neuralgia	...	51		51		
Diseases of Eye :—						
Conjunctivitis	...	65		65		
Corneal ulcer	...	5		5		
Iritis	...	1		1		
Blepharitis	...	1		1		
Presbyopia	...	1		1		
Hordeolum	...	1		1		
Diseases of Ear :—						
Wax in ear	...	3		3		
Inflammation of ear, non-suppurative	...	30		30		
Suppurative inflammation	...	21		21		
Diseases of Respiratory System :—						
Coryza	...	67		67		
Bronchitis	...	411		411		
Pleurisy	...	2		2		
Diseases of Digestive System :—						
Caries of teeth	...	28		28		
Gumboil	...	3		3		
Stomatitis	...	1		1		
Sore throat	...	4		4		
Food poisoning	...	5		5		
Diarrhoea	...	92		92		
Dyspepsia	...	15		15		
Constipation	...	76		76		
Colic	...	32		32		
Jaundice	...	1		1		
Peritonitis	...	2		2		
Diseases of Lymphatic System :—						
Hypertrophy of lymph glands.	...	5		5		
" of Parotid "	...	3		3		
Diseases of Male Generative Organs :—						
Orchitis	...	1		1		
Diseases of Female Generative Organs :—						
Mastitis	...	1		1		
Diseases of Connective Tissue :—						
Abscess	...	8		8		
Diseases of Locomotion Organs :—						
Myalgia	...	54		54		
Stiff neck	...	1		1		
Diseases of Skin :—						
Eczema	...	30		30		
Impetigo	...	1		1		
Psoriasis	...	1		1		
Herpes	...	1		1		
Pityriasis	...	12		12		
Other Diseases	...	18		18		
Ulcers	...	45		45		
Boils	...	7		7		
Ringworm	...	36		36		
Scabies	...	136		136		
Injuries :—						
Burns and scalds	...	15		15		
Abrasions	...	8		8		
Contusions	...	48		48		
Wounds	...	907		907		
Strain and sprain	...	24		24		
Fractures	...	3		3		
Other injuries	...	3		3		
Surgical Operations :—						
Minor	...	10		10		

III. SANITATION.

There is no officer of Sanitation *per se* in the Protectorate. Some years ago an Ordinance was passed creating every Medical Officer Medical Officer of Health for the district he was stationed in.

I. ADMINISTRATIVE

Sanitation is under the control of the various Town Councils, and Regulations were passed for the Townships of Zomba, Blantyre, Fort Johnston and Port Herald during the year 1910.

1. The Vaccination Amendment Ordinance.
2. Sleeping Sickness Rules, W. Nyasa and Mombasa.
3. Sleeping Sickness Rules, Marimba and Lilongwe.
4. Sleeping Sickness Rules, Dowa.
5. Sleeping Sickness Rules, W. Nyasa.

These latter five Ordinances were enacted in 1910.

II. PREVENTIVE MEASURES.—Malaria.

In the unhealthier districts all houses now are either wholly mosquito proofed or have a mosquito proof room. It has however been found that mosquito proof rooms are intolerably stuffy and hot, and I have therefore recommended to His Excellency the Governor that in future all houses in unhealthy districts be wholly mosquito proofed and this is to be done. Mosquito breeding pools are drained wherever possible, but in a large area of the Protectorate this is not possible. Drains and guttering are kept clean, and in river stations boats are emptied of water and occasionally oiled, and the river weeds cut and burned. Where advisable the river banks are piled so as to give deep water close in to the bank and thus keep down the growth of weeds which tend to stagnate the run of water and form suitable breeding places for anophelines. Empty native pots, etc., are either destroyed or turned upside down. In each district where there is a Medical Officer a weekly inspection takes place as far as his other duties permit and if he is present in his station.

His Excellency the Governor has issued a circular directing all officials to take routine quinine, and quinine is given to natives whenever they desire it free of cost.

I think I may say there is a decided decrease in the number of anophelines in most stations.

The Medical Officer, Blantyre, reports that there is great difficulty in getting people to destroy the small breeding places of mosquitoes and that the Indian traders are particularly troublesome in this respect. His duties are so numerous that it is not possible for him to do all he would wish in such matters and until a Sanitary Inspector is appointed to do this work only, probably these nuisances will keep recurring. The general public are strangely apathetic in these matters.

In Zomba I believe there has been an increase in the number of mosquitoes and this I have no hesitation in saying is due to the number of irrigation streams down the mountain side: these partially dry up and leave pools of stagnant or nearly stagnant water scattered throughout Zomba. A proper system of bricked and cemented drains is necessary to carry off the rain water. Dr. Stannus the Medical Officer, Zomba, reports strongly on this matter.

In Fort Johnston, Chiromo and perhaps Port Herald mosquitoes are less prevalent than heretofore, but in these three owing to their proximity to marshes mosquito proofing and quinine must always be in evidence.

Both to escape mosquitoes and for the sake of coolness and any breeze that may be present I strongly recommend that all houses in unhealthy districts be double storied as well as mosquito proofed. I do not think this would cost a great deal more than single storied houses as bricks are cheap.

III. COMMUNICABLE DISEASES.—Trypanosomiasis.

I have dealt with the spread of this infection previously and have only to reiterate that it is certainly the opinion in Nyasaland that *G. morsitans* is the vector.

Two Medical Officers are on Sleeping Sickness duty only, and all others are directed to be on the *qui vive* for cases.

As far as is possible District Medical Officers will examine the native population but as it will readily be understood such work ought to be systematic, and with their other duties District Medical Officers have not the time for this.

Professor Newstead has been appointed to investigate the Bionomics of *G. morsitans* and other biting flies.

When we can definitely say that *G. morsitans* is the vector of Nyasaland human Trypanosomiasis the population will be moved out of the infested area.

All vessels passing down Lake Nyasa are examined and all natives coming from infected areas.

At present it ought to be noted that the N. Nyasa district which marches with the Loangwa district of N. E. Rhodesia is without a Medical Officer. The borders are patrolled by Police under the District Resident.

Yellow fever does not exist in the Protectorate though we have myriads of *stegomya calopus*.

Filariasis exists, to any extent, only in the N. Nyasa district where I have pointed out we have no Medical Officer.

Epidemic Disease. Plague: we have had no plague in Nyasaland during 1910.

Small-pox. A small epidemic (the only one of the year) occurred in the S. Nyasa district. There occurred 236 cases with 25 deaths. It arose from two cases which I failed to trace to their sources, and was fostered by a Yao chief who vaccinated with variolous matter 70 children before I got to hear of the outbreak. He was duly punished and the district re-vaccinated. 24 native vaccinators are employed and I have appended a list of vaccinations done.

The Lister Institute lymph has continued to give excellent results.

The bad results in the Momberas district I attribute to the natives probably washing out the lymph as soon as vaccinated. There was some trouble with the native population there but this was controlled by the Resident. In Mlanje I think defective methods must have been employed by the native vaccinator.

Dysentery. This will always present difficulties in Nyasaland as natives drink foul water almost as readily as clean. As far as we are able with the huge native population the water is safeguarded but it will be seen that with the small white population and the enormous black this is an almost hopeless task outside townships and stations.

All water is recommended to be boiled before drinking. In this connection I must request reference to my observations on water supply especially in reference to Zomba and Blantyre townships.

The dysentery of Nyasaland almost invariably yields to the double sulphates if taken in time.

Enteric Fever. This has not been present in epidemic form and only one case is reported.

Helminthic Diseases. Ankylostomiasis though present does not in my opinion account for a heavy death-rate.

Taeniosis is uncommon.

Bilharzia is common but is mostly a chronic infection: I am informed that on the Zambesi fatal rectal infections are common. I have knowledge of only one official infected.

Trichinosis as far as I know does not occur.

Guinea worm is not indigenous and the few cases that I have seen have been in Sikh soldiers infected elsewhere.

IV. GENERAL MEASURES.

(1). Sewage Disposal.

The method of disposal in this country is invariably by burial. In the smaller stations this is satisfactory but in Zomba and Blantyre it is not.

In Zomba, there is no special staff of night-soil men. Night-soil is simply buried in each individual's compound by his own boys. To any one who knows the native it is evident that they will do this in a casual manner, and if rank vegetation is in evidence will simply empty the pails without burial. There are a number of irrigation streams coming down the mountain side and I have no doubt natives make use of these to wash night-soil pails: moreover there is a heavy rainfall and the rain water empties into these streams. There can be little doubt that natives wash pots, pans and plates with water drawn from these streams: in fact I have seen them do so. Given an enteric or dysenteric stool one could not have a simpler way of creating an epidemic. I invite attention to my proposals under the heading water supply.

The Medical Officer Blantyre reports that matters are as unsatisfactory in Blantyre where the water supply is from surface wells, and in this connection some years ago I reported an epidemic of dysentery affecting the European population which without doubt arose from the water of a contaminated well used in a soda water factory.

Disposal of Refuse. Refuse is emptied into ashpits and either buried or burned.

I would here recommend that at any rate for Zomba and I believe also for Blantyre that the system of conservancy in vogue in Khartoum should be instituted: that is to say that a double set of covered night-soil pails be used to each latrine (more for native latrines): these to be changed every night, bullock carts coming round with the clean pails and removing those used. An incinerator is the safest method of disposing of sewage and could also be used for the disposal of refuse and offal. The Director of Public Works Department informs me that he believes a suitable incinerator could be constructed for about £100. I urge that this method be adopted for both Zomba and Blantyre without delay.

Water Supply. In most stations this is fairly satisfactory but in all cases water ought to be boiled before use.

In Zomba, from the above remarks, it will be seen that a pipe system is required. Dr. Stannus, Medical Officer of Health, Zomba, reports that the only system that would be of any use would be a pipe system with pipe stands at the various levels. Besides the question of contamination, there is that of mosquito borne disease and, as I have already pointed out, these irrigation streams form mosquito breeding pools all over Zomba. I therefore recommend that a pipe borne water supply be forthwith instituted in Zomba, with pipe stands at the various levels.

In Blantyre the water supply has been vigorously condemned by successive Medical Officers for a number of years. The insufficiency and contamination are generally recognized. It is proposed to bring a pipe borne supply from a distance, but the expense I understand is prohibitive. There are a number of Government Officials stationed in Blantyre including H. M. Judge and the Hon. the Attorney General, I would therefore ask that a sum of money be granted by Government in aid of this scheme.

Drainage. The question of drainage is mainly one of surface water in the Protectorate. In Zomba and Blantyre I consider a system of properly graded brick drains well cemented are necessary for the prevention of mosquito borne diseases. In Fort Johnston this is not necessary as river cleaning and piling of the banks as it is on a sandy soil which automatically drains it. The same remark applies to Chiromo and Port Herald. Kota Kota is a hopeless station as regards sanitation and, the best that can be done is what is being done, viz., building the Resident a house away from the native township. In all the hill stations brick drains graded and cemented are necessary. All these recommendations have been recognized years ago and the whole matter is one of expense. I think the expense is justified and the improved health of the community likely to accrue would pay for it. Bush is cleared round all stations and grass kept down from time to time.

Hospitals and Dispensaries. There are European Hospitals in Zomba, Blantyre and Fort Johnston as well as dispensaries. In Zomba and Fort Johnston there are also Native Hospitals. In this connection I would urge the appointment of Sub-Assistant Surgeons to every medical station as single-handed a Medical Officer is handicapped in every way. For operations skilled assistance is needed: when the Medical Officer has to travel on duty, as all frequently have to do, they ought to be able to feel that they have left their native cases in proper hands and the native African fully realises this: again there is a great increase in the clerical work to be done and such an assistant would be invaluable.

The principal diseases treated in the various Hospitals have been, Malaria, Dysentery, Syphilis, Beri Beri, Enteric Fever and operation cases of various descriptions. There is a special Sleeping Sickness Hospital in the "Proclaimed" area.

Scientific. Medical Officers are kept too busy for much research work to be done. Microscopes are in use in every medical station but are mostly used for diagnostic purposes. Dr. Stannus in Zomba has I think done more actual research work than any other Medical Officer and he ought to be consulted on the questions affecting trypanosomiasis in Nyasaland.

TABLE IV.
SUMMARY OF ROUTINE SANITARY WORK DONE DURING THE YEAR 1910-11 IN
THE TOWN.

1. NAME OF TOWN — CHIROMO.

					Approximate area.	Number of proclaimed open spaces.
1909	...	...	...	...	113 acres.	27 (unoccupied) or 54 acres.
1910	...	...	...	...
1911	...	...	...	...

2. POPULATION

					Number of Natives.		Number of Europeans.		Total.
					Males.	Females.	Males.	Females.	
1909	261	84	11	2	355
1910	...	...	...	...			10	2
1911	...	...	...	...			9	1

3. HOUSING.

					Number occupied by Europeans.	Asiatics	Number occupied by Natives.
Number of Houses. :—							
1909	...	...	...	...	11	11	61 built by employers and other huts which vary in number.
1910	...	...	...	...	20		
1911	...	...	...	...	8		

4. MOSQUITO PROTECTION OF HOUSES.

					1909	1910	1911
Number of European houses wholly mosquito proofed					nil.	nil.	nil.
Number of European houses with mosquito room					"	4	"
Number rendered during the year wholly mosquito proofed					"	—	"
„ rendered during the year partially mosquito proofed					"	1	"

5. ERECTION OF NEW BUILDINGS DURING THE YEAR.

					1909	1910	1911
Number of Public Buildings erected with sanction as to site, construction, and relation to other buildings					nil.	nil.	nil.
Number of houses erected with sanction as to site, construction and relation to other buildings					"	"	"
Number of huts erected with sanction as to site construction and relation to other buildings					Huts are generally rebuilt every 1 or 2 years.		
Number of houses built without sanction					nil.	nil.	nil.
Number of huts built without sanction					"	"	"

ACTION TAKEN.

					Number of Prosecutions.		Number demolished.	
					Huts.	Houses.	Huts.	Houses.
1909	...	...	...	...	nil.	nil.	One large, and several ordinary.	2
1910	...	...	...	...	"	"		10
1911	...	...	...	...	"	"		1

6. MARKETS.

_____							Total number.	Number paved and drained.	Number unpaved.
1909	...	...	...	...	...	...	nil.	nil.	nil.
1910	...	...	...	...	...	...	"	"	"
1911	...	...	...	...	...	...	"	"	"

7. SLAUGHTER HOUSES.

_____							Total number.	Number paved and drained.	Number unpaved.
1909	...	...	...	...	...	...	nil.		
1910	...	...	...	...	...	...
1911	...	...	...	...	...	...

8. LATRINES

								For Males.		For Females.	
								Number.	Number of seats.	Number.	Number of seats.
Number of Private Latrines :—											
1909	...	...	...	...	...	...	...	3		3	
1910	...	...	...	...	...	...	...	2		2	
1911	...	...	...	...	...	...	...	2		2	
Number of new Public Latrines erected during the year :—											
1909	...	...	...	...	...	...	...	3		3	
1910	...	...	...	...	...	...	...	2		2	
1911	...	...	...	...	...	...	...	2		2	
Number of Public Latrines repaired during the year :—											
1909	...	...	...	...	...	...	...	nil.		nil.	
1910	...	...	...	...	...	...	...
1911	...	...	...	...	...	...	...
Number of Public Latrines demolished during the year :—											
1909	...	...	...	...	...	...	...	3		3	
1910	...	...	...	...	...	...	...	2		2	
1911	...	...	...	...	...	...	...	2		2	
									1909.	1910.	1911.
Number of private latrines								—	Varies ; a sufficient	—	19
Average number of pails of nightsoil removed daily								—		—	19
Average number of soiled pails removed and clean pails substituted								—		—	none.
Number of nightsoil men employed to clean latrines and remove excreta											number.
Number of cesspools								}			There are none
Number of cesspools cleansed											
Number of new cesspools constructed during the year											
Number of old cesspools abolished											
Number of cesspools oiled regularly by Department											

9. REMOVAL OF REFUSE.

_____							1909.	1910.	1911.
Number of dustbins.							—		
Number of carts at work daily to remove refuse from streets							There are no carts.		
Amount of refuse removed daily							Half ton daily.		
Number of carts at work daily to remove refuse from yards and premises							None.		
Number of men employed for removing refuse							Prisoners and 8 employed by the Town Council.		

10. MODE OF DISPOSAL OF EXCRETA, REFUSE, AND OFFAL.

	Daily average number of pails of Excreta.			Daily average number of cartloads of Refuse.			Daily average number of cartloads of Slaughter House and Market Offal.		
	1909.	1910.	1911.	1909.	1910.	1911.	1909.	1910.	1911.
Buried or trenched			19						
Burnt									
Thrown into sea						$\frac{1}{2}$ ton			
Otherwise dealt with									

11. AVERAGE DAILY NUMBER OF CARTLOADS OF TIN CANS, BOTTLES, BROKEN CROCKERY AND OTHER INCOMBUSTIBLE MATERIAL REMOVED FROM HOUSES, HUTS, AND COMPOUNDS.

1909.	1910.	1911.
		Trivial amount.

12. WATER SUPPLY.

Nature of Water Supply	1909.	1910.	1911.
Pipe-borne water :— Source (river, lake, or spring) :— Number of linear yards	Water is drawn direct from the Ruo River.		
Number of stand-pipes along roads			
Number of stand-pipes in compound and houses			
Wells :— Public :— Number			
Number with pumps protected against surface water and mosquito protected			
Private :— Number			
Number protected against surface water and mosquito proofed			
Tanks :— Public :— Number underground			
Number mosquito proofed and served by pumps			
Number above ground			
Number mosquito protected			
Number of 400 gallons capacity or less			
Number above 400 gallons.			
Private :— Number underground			
Number mosquito protected			
Number above ground			
Number mosquito protected			
Number of 400 gallons capacity or less			
Number above 400 gallons			
Nature of tanks			
Wood	4 nil.	4 nil.	4 nil.
Iron			
Concrete			
Barrels :— Number			
Number mosquito proofed			

13. DRAINAGE.

Nature of drainage.	Public.	Private.
Masonry drains :—		
Lineal yards of masonry drains :—		
1909	160 yards.	
1910	260 „	
1911	300 „	
Lineal yards reconstructed during the year :—		
1909	} nil.	
1910		
1911		
Lineal yards repaired during the year :—		
1909	} nil.	
1910		
1911		
Lineal yards of new drains constructed during the year :—		
1909	100	
1910	60	
1911		
Earth drains or ditches :—		
Number of linear yards of ditches cleaned :—		
1909	3½ miles.	
1910		
1911		
Number of linear yards of ditches dug and graded :—		
1909	none.	
1910		
1911		
Average frequency of clearing ditches of grass :—		
1909	weekly.	
1910		
1911		

14. CLEARANCE OF UNDERGROWTH, LONG GRASS AND JUNGLE.

—	1909.	1910.	1911.
Number of square yards of weeds, grass and vegetation cut and removed	113 acres.	59 acres.	59 acres.
Average frequency of clearance of rank vegetation on same area	8 times per annum.	8 times per annum.	4 times per annum.

15. EXCAVATIONS AND LOW LYING LAND.

—	1909.	1910.	1911.
Number of pools and excavations	nil.	nil.	nil.
Number of excavations filled up	„	„	„
Amount of low-lying and marsh land raised and drained	„	„	„
Number of pools, marshes, streams, &c. fish stocked	„	„	„
Number of cubic yards of material used for filling up pools and excavations	„	„	„
Number of persons fined for making new excavations	„	„	„
Average number of men daily employed in filling up pools, etc.	„	„	„

16. OILING.

—	1909.	1910.	1911.
Number of drains oiled	nil.	nil.	nil.
Number of pools and excavations oiled	„	„	„
Number of tanks and barrels oiled	„	„	„
Average number of men daily employed for oiling drains and water tanks or barrels.	„	„	„

17. INSPECTION AND PROSECUTIONS

	1909.	1910.	1911.
Number of inspectors employed	1	1	1
Number of houses inspected	No	record is	kept.
Number of houses where larvæ found	"	"	"
Number of notices served to remove conditions cansing the breeding of larvae	Verbal	orders are	given.
Number of persons fined for having mosquito larvae on premises ...	nil.	nil.	nil
Number of notices served to remove insanitary conditions on premises ...	Verbal	orders are	given.
Number of persons fined for not removing insanitary conditions after notice	nil.	nil.	nil
Number of soda and aerated water factories inspected	There	are none.	

TABLE IV.
SUMMARY OF ROUTINE SANITARY WORK DONE DURING THE YEAR 1910-11 IN THE TOWNSHIP OF PORT HERALD.

Approximate area About 200 acres.	Open Spaces. About $\frac{2}{3}$ unbuilt upon.
--------------------------------------	---------------------------------------------------

2. POPULATION.

	Europeans		Asiatics.		Natives.	
	Males	Females	Males	Females	Males	Females.
1911	11	nil.	30	3	250	30

3. HOUSING.

	Europeans.	Asiatics.	Natives.
1911.	10	21	80 (approximate)

4. MOSQUITO PROTECTION OF HOUSES.

Number of European Houses wholly mosquito proofed	2.
Do. do. with mosquito proof room	1.

5. ERECTION OF NEW BUILDINGS DURING THE YEAR.

	1910	1911
No. of Public Buildings erected with sanction, &c.	1	
No. of houses do. do. do.	2	
No. of huts do. do. do.		Rebuilt periodically.
No. of houses built without sanction	nil.	nil.
No. of huts do. do.	nil.	nil.

ACTION TAKEN.
nil.

6. MARKETS.
One bricked floor.

7. SLAUGHTER HOUSES.
nil.

8. LATRINES. 1911.

	For Males	For Females
No. of Public Latrines (Rebuilt annually.)	3	3
No. of Private Latrines	28.	
Average No. of pails of nightsoil daily	25.	
No. of nightsoil men employed	no information.	
No. of cesspools	nil.	

9. REMOVAL OF REFUSE.

No. of dustbins	25.
No. of carts, etc.	none.
No. of men employed for removing refuse	done privately.

10. MODE OF DISPOSAL OF EXCRETA, REFUSE & OFFAL.
All Trenched.

11. AVERAGE DAILY NO. OF CARTLOADS OF TIN CANS, ETC.
No Statistics.

12. WATER SUPPLY.

Wells, Public	Drawn direct from the Shire.
„ Private	Nil.
	One, unprotected against mosquitos.

13. DRAINAGE.

Masonry drains, One 35 yards.
Several miles of open drains.
Average frequency of clearing ditches of grass. As required.

14. CLEARANCE OF UNDERGROWTH, LONG GRASS & JUNGLE.

No. of square yards of weeds, grass and vegetation cut and removed. About 70 acres.
Average frequency of clearance of rank vegetation on same area. 4 times year.

15. EXCAVATIONS AND LOW-LYING LAND.

No. of excavations 1910. 4
No. of excavations filled up. nil

16. OILING. nil

17. INSPECTIONS AND PROSECUTIONS.
Nil.

TABLE IV.

SUMMARY OF ROUTINE SANITARY WORK DONE DURING THE YEAR IN THE TOWNS

1. NAME OF TOWN. FORT JOHNSTON.

---	Approximate area.	Number of proclaimed open spaces.
1910	44 acres.	Nil.
1911	44 acres.	
1912		

2. POPULATION.

---	Number of Natives.		Number of Europeans.		Total.
	Males.	Females.	Males.	Females.	
1910	75,000		15	2	75,017
1911	80,000		15	1	80,016
1912					

3. HOUSING.

_____	Number occupied by Europeans.	Number occupied by Natives.
Number of Houses :— 1910 1911 1912 	12	Indefinite : are continually building.
Number of Huts :— 1910 1911 1912 		
No huts in township.		

4. MOSQUITO PROTECTION OF HOUSES.

—	1910.	1911.	1912.	
Number of European houses wholly mosquito protected	8	8		
Number of European houses with mosquito room				
Number rendered during the year wholly mosquito protected	4			
Number rendered during the year partially mosquito protected				

5. ERECTION OF NEW BUILDINGS DURING THE YEAR.

---	1910.	1911.	1912.
Number of public buildings erected with sanction as to site, construction, and relation to other buildings.	Nil.		
Number of houses erected with sanction as to site, construction, and relation to other buildings.			
Number of huts erected with sanction as to site, construction, and relation to other buildings			
Number of houses built without sanction			
Number of huts built without sanction			

ACTION TAKEN.

	Number of Prosecutions.		Number demolished.	
	Huts.	Houses.	Huts.	Houses.
1910	None.		None.	
1911				
1912				

6. MARKETS.

	Total Number.	Number paved and drained	Number unpaved.
1910	One outside town	(on outskirts) is and no paving.	only a grass shed
1911			
1912			

7. SLAUGHTER-HOUSES.

	Total number.	Number paved and drained.	Number unpaved
1910	Nil.		
1911			
1912			

8. LATRINES.

	For Males.		For Females.	
	Number.	Number of seats.	Number.	Number of seats.
Number of Public Latrines:—	4 Renewed	annually.	2 Renewed	annually.
1910				
1911				
1912				
Number of New Public Latrines erected during the year :—				
1910				
1911				
1912				
Number of Public Latrines repaired during the year :—				
1910				
1911				
1912				
Number of Public Latrines demolished during the year :—				
1910				
1911				
1912				
		1910.	1911.	1912.
Number of Private Latrines		12	12	Substituted as occasion demands. All done privately, one each.
Average number of pails of nightsoil removed daily ..		12	12	
Average number of soiled pails removed and clean pails substituted ...				
Number of night soil men employed to clean latrines and remove excreta.				
Number of cesspools				
Number of cesspools cleansed				
Number of new cesspools constructed during the year				
Number of old cesspools abolished				
Number of old cesspools oiled regularly by Department				

9. REMOVAL OF REFUSE.

	1910.	1911.	1912.
Number of dustbins			
Number of carts at work daily to remove refuse from streets	Done by hand labour Quantity unknown. Done by hand. Not known. Not known		
Amount of refuse removed daily			
Number of carts at work daily to remove refuse from yards and premises.			
Amount of refuse removed daily from yards and premises			
Number of men employed for removing refuse			

10. MODE OF DISPOSAL OF EXCRETA, REFUSE, AND OFFAL.

	Daily average number of pails of Excreta.			Daily average number of cartloads of Refuse.			Daily average number of cartloads of Slaughter House and Market Offal.		
	1910.	1911.	1912.	1910.	1911.	1912.	1910.	1911.	1912.
Buried or trenched	buried	buried.							
Burnt	"	"							
Thrown into sea	"	"							
Otherwise dealt with	"	"							

11. AVERAGE DAILY NUMBER OF CARTLOADS OF TIN CANS, BOTTLES, BROKEN CROCKERY AND OTHER INCOMBUSTIBLE MATERIAL REMOVED FROM HOUSES, HUTS. AND COMPOUNDS

1910.	1911.	1912.
3 to 4 cwts.	3 to 4 cwts.	

12. WATER SUPPLY.

Nature of Water Supply	1910.	1911.	1912.
Pipe-borne water :—			
Source (river, lake, or spring) :—			
Number of linear yards			
Number of stand-pipes along roads			
Number of stand-pipes in compounds and houses			
Wells :—			
Public :—			
Number			
Number with pumps protected against surface water and mosquito protected			
Private :—			
Number	3	3	
Number protected against surface water and mosquito protected	3	3	
Tanks :—			
Public :—			
Number underground			
Number mosquito protected and served by pumps			
Number above ground			
Number mosquito protected			
Number of 400 gallons capacity or less			
Number above 400 gallons.			
Tanks :—			
Private :—			
Number underground			
Number mosquito protected			
Number above ground			
Number mosquito protected			
Number of 400 gallons capacity or less			
Number above 400 gallons			
Nature of tanks			
Wood			
Iron			
Concrete			
Barrels :—			
Number			
Number mosquito protected			

13. DRAINAGE.

Nature of drainage.	Public.	Private.
Masonry drains:—		
Lineal yards of masonry drains:—		
1910		
1911		
1912		
Lineal yards reconstructed during the year:—		
1910		
1911		
1912		
Lineal yards of new drains constructed during the year:—		
1910		
1911		
1912		
Earth drains or ditches:—		
Number of linear yards of ditches cleaned:—		
1910		
1911		
1912		
Number of linear yards of ditches dug and graded:—		
1910		
1911		
1912		
Average frequency of clearing ditches of grass:—		
1910		
1911		
1912		

14. CLEARANCE OF UNDERGROWTH, LONG GRASS AND JUNGLE.

—	1910.	1911.	1912.
Number of square yards of weeds, grass and vegetation cut and removed	Actual	area not re	corded.
Average frequency of clearance of rank vegetation on same area	Once every ing	3 months to season).	(also accord-

15. EXCAVATIONS AND LOW LYING LAND.

—	1910.	1911.	1912.
Number of pools and excavations			
Number of excavations filled up			
Amount of low-lying and marsh land raised and drained			
Number of pools, marshes, streams, etc. fish stocked	Nil.		
Number of cubic yards of material used for filling up pools and excavations			
Number of persons fined for making new excavations			
Average number of men daily employed in filling up pools, etc.			

16. OILING.

—	1910.	1911.	1912.
Number of drains oiled	Boats occasionally oiled : generally emptied.		
Number of pools and excavations oiled			
Number of tanks and barrels oiled			
Average number of men daily employed for oiling drains, pools, and water tanks or barrels.			

17. INSPECTIONS AND PROSECUTIONS.

	1910.	1911.	1912.
Number of inspectors employed		2 (M. O. & Resident)	
Number of houses inspected		1	
Number of houses where larvæ are found		Unknown	
Number of notices served to remove conditions causing the breeding of larvae			
Number of persons fined for having mosquito larvae on premises ...			
Number of notices served to remove insanitary conditions on premises ...			
Number of persons fined for not removing insanitary conditions after notice			
Number of soda and aerated water factories inspected			

TABLE IV.

SUMMARY OF ROUTINE SANITARY WORK DONE DURING THE YEAR 1910-11 IN THE TOWN.

1. NAME OF TOWN—BLANTYRE.

	Approximate area.	No. of proclaimed open spaces.
1909	1685 acres approximately.	(1) Boma Square.
1910		(2) Sports Ground.
1911		(3) 25 acres of plantation. (4) Golf links.

2. POPULATION.

	No. of Natives.		No. of Europeans.	
	M.	F.	M.	F.
1909	No record No record 880 inner, 3000 to 10,000 outer town- ship according to time of year.		No record for township alone.	
1910				
1911				

3. HOUSING.

	No. occupied by Europeans.	No. occupied by Natives.
No. of houses.		
1909	20 European	About 250 in inner township temporary shelters erected for floating population in outer township as required.
1910	22 "	
1911	22 "	

4. MOSQUITO PROTECTION OF HOUSES.

	1909	1910	1911
No. of European houses wholly mosquito proofed ...	None known of.	None known of.	None known of.
No. of European houses with mosquito room	2 or 3 known of.	2 or 3 known of.	2 or 3 known of
No. rendered wholly mosquito proof 1910-11	None	None	but insufficiently protected.
No. rendered partially mosquito proof 1910-11			

5. ERECTION OF NEW BUILDINGS DURING THE YEAR.

	1909	1910	1911
No. of Public buildings erected with sanction as to site, construction and relation to other buildings	3	3	2
No. of Houses			
No. of Huts			
No. of houses built without sanction			1 slaughter house (H. Werth).
No. of Huts built without sanction			

ACTION TAKEN.

Number Prosecutions.				Number demolished.	
				Huts.	Houses.
1909	...	..	...	Nil.	Nil.
1910	...	...	...
1911	..	...	...

6. MARKETS.

							Total number.	Number paved and drained.	Number unpaved.
1909	...	...	...	...	...	...	1		1
1910	...	...	...	...	...	...	1		1
1911	...	...	...	...	...	...	1		1

7. SLAUGHTER HOUSES.

							Total number.	Number paved and drained.	Number unpaved.
1909	...	...	...	...	...	...	—	—
1910	...	...	...	...	...	...	—	—
1911	...	...	...	...	...	...	1 (erected privately without sanction of Town Council and situated in the centre of the Township).	1	

8. LATRINES.

									For Males.		For Females.	
									Number.	Number of seats.	Number.	Number of seats.
Number of Public Latrines :—												
1909	...	...	...	...	...	...	...	...	1	no seats.	1	no seats.
1910	...	...	...	...	...	...	...	...	1	4	1	4
1911	...	...	...	...	...	...	...	...	1	4	1	4
No. of new Public Latrines erected during :—												
1909	...	...	...	...	...	...	...	...	none.	none.	none.	none.
1910	...	...	...	...	...	...	...	...	1	4	1	4
1911	...	...	...	...	...	...	...	...	none.	none.	none.	none.
No. of Public latrines repaired during :—												
1909	...	...	...	...	...	...	...	...	—	—	—	—
1910	..	...	...	...	...	...	...	...	—	—	—	—
1911	...	...	...	...	...	...	...	...	—	—	—	—
No. of Public Latrines demolished during :—												
1909	...	...	...	...	...	...	...	...	—	—	—	—
1910	..	...	..	...	...	...	...	...	1	no seats.	1	no seats.
1911	...	...	...	...	...	...	...	...	—	—	—	—
										1909.	1910.	1911.
Number of Private latrines										20	22	22
Average number of pails of nightsoil removed daily										no record.	no record.	no record.
Average number of soiled pails removed and clean pails substituted										"	"	"
Number of nightsoil men employed to clean latrines										Latrines cleaned by owners own employees.		
Number of cesspools										none.	none.	none.
" " " cleansed										"	"	"
Number of new cesspools constructed during year										"	"	"
Number of old cesspools abolished										"	"	"
Number of cesspools oiled regularly by the Department										"	"	"

9. REMOVAL OF REFUSE.

	1909.	1910.	1911.
Number of Dust bins	No regular dust bins in use.		
Number of carts at work daily to remove refuse from streets	None.		
Amount of refuse removed daily	No record.		
Amount of refuse removed daily from yards and premises	..		
Number of men employed for removing refuse	Two by Town Council to clean up and remove refuse at Native Market.		

10. MODE OF DISPOSAL OF REFUSE, EXCRETA AND OFFAL.

	Daily average number of pails of excreta.			Daily average number of cartloads of Refuse.			Daily average number of cartloads Slaughter House Offal.		
	1909.	1910.	1911.	1909.	1910.	1911.	1909.	1910.	1911.
Buried or Trenched	All buried, no record.			None.	None.	None.	None. Average 3 bullocks, 1 sheep, 1 pig killed per week for European use.		
Burnt									
Thrown into sea	None	None	None	..	..	..
Otherwise dealt with									

11. AVERAGE DAILY NUMBER OF CARTLOADS OF TIN CANS, BOTTLES, CROKERY AND OTHER INCOMBUSTIBLE MATTER REMOVED FROM HOUSES, HUTS, ETC.

1909.	1910.	1911.
-------	-------	-------

No record. No carts in use.

12. WATER SUPPLY.

Nature of Water Supply	1909.	1910.	1911.
Pipe-borne water:—			
Source (river, lake, or spring):—			
Number of linear yards	None	None.	None
Number stand-pipes on roads			
Number stand-pipes in compounds			
Wells:—			
Public:—			
Number	1	1	1
Number with pumps protected against surface water and mosquito proofed	With covered house	With covered house	With covered house
Private:—			
Number	Unknown	Unknown	Unknown
Number protected against surface water and mosquito protected			
Tanks:—			
Public:—			
Number underground	None	None	None
Number mosquito protected and served by pumps			
Number above ground			
Number mosquito protected			
Number of 400 gallons capacity or less			
Number above 400			
Tanks:—			
Private:—			
Number underground	3 known of	3 known of	5 known of
Number mosquito protected			
Number above ground			
Number mosquito protected			
Number of 400 gallons capacity or less			
Number above 400 gallons			
Nature of tanks			
Wood	Iron	Iron	Iron
Iron			
Concrete			
Barrels:—			
Number	None	None	None
Number mosquito protected			

13. DRAINAGE.

Nature of drainage.	Public.	Private.
Masonry drains:—		
Lineal yards of masonry drains:—		
1909	None	None
1910	None	None
1911	Brick drains not yet complete	None
Lineal yards reconstructed during the year:—		
1909		
1910		
1911		
Lineal yards repaired during the year:—		
1909		
1910		
1911		
Lineal yards of new drains constructed during the year:—		
1909	None completed yet	
1910		
1911	Ordinary rough stone drains	
Earth drains or ditches:—		
Number of linear yards of ditches cleaned:—		
1909		
1910	Cannot say	
1911		
Number of linear yards of ditches dug and graded:—		
1909		
1910	Cannot say	
1911		
Average frequency of clearing ditches of grass:—		
1909		
1910	Roads boy always employed	
1911		

14. CLEARANCE OF UNDERGROWTH, LONG GRASS AND JUNGLE.

—	1909.	1910.	1911.
Number of square yards of weeds, grass and vegetation cut and removed	} All plots	cleared usually twice a year.	
Average frequency of clearance of rank vegetation on same area			

15. EXCAVATIONS AND LOW LYING LAND.

—	1909.	1910.	1911.
Number of pools and excavations	No record. None		
Number of excavations filled up			
Amount of low-lying and marsh land raised and drained			
Number of pools, marshes, streams, etc. fish stocked			
Number of cubic yards of material used for filling up pools and excavations			
Average number of men daily employed in filling up pools, etc.	No persons the Roads	employed for this purpose: boys occasionally fill up holes.	

16. OILING.

—	1909.	1910.	1911.
Number of drains oiled			
Number of pools and excavations oiled			
Number of tanks and barrels oiled		None.	
Average number of men daily employed for oiling drains, pools, water tanks and barrels.			

17. INSPECTIONS AND PROSECUTIONS.

	1909.	1910.	1911.
Number of inspectors employed	None: the	M. O. H. makes	occasional inspections.
Number of houses inspected	House to house inspection March 3rd 1909.	No record	No record
Number of houses where larvæ found	No record	No record	No record
Number of notices served to remove conditions causing breeding of larvæ	One recorded, general notice sent round.	No record other than general notice by Town Clerk.	No record
Number of persons fined for having mosquito larvae on premises ...	No record	No record	No record
Number of notices served to remove insanitary conditions on premises ...	Two recorded.		
Number of persons fined for not removing insanitary conditions after notice	4 recorded as fined 10/- each.	No record	1 recorded fined 10/-
Number of soda and aerated water factories inspected	No record	No record	No record

4. METEOROLOGICAL OBSERVATIONS RECORDED AT ZOMBA, 1910.

	Temperature.						Humidity.		Rainfall.		Wind.
Month.	Absolute shade maximum.	Absolute shade minimum.	Range.	Mean maximum.	Mean minimum.	Mean temperature.	Mean humidity.	Vapour tension.	Amount inches.	No. of days.	General direction.
	°	°	°	°	°	°	%				
January.	88·5	60	28·5	81·6	63·8	70·8	76	·368	9·64	17	E
February.	85	58·8	26·2	83·6	64·7	71·0	86	·646	10·86	24	E
March.	85	61	24	79·7	64·4	70·1	85	·624	5·61	20	E
April.	81	53·4	27·7	72·8	61·0	66·2	84	·538	4·67	18	E
May.	81	49	32	73·3	55·4	62·9	77	·440	·99	8	W
June.	83	45	38	71·3	51·4	61·3	72	·387	·83	7	E
July.	77	45	32	70·3	51·5	59·8	72	·368	·71	3	E
August.	81·6	45	36·6	75·1	53·1	63·4	62	·362	·20	3	E
September.	87	49	39	79·7	57·5	67·5	61	·402	·26	1	E
October.	89	57	32	83·0	62·8	72·0	58	·438	·86	5	E
November.	91	53	38	83·6	62·5	71·5	64	·481	2·50	10	E
December.	85	59	26	79·0	63·1	67·9	82	·580	21·18	23	E
Means.				77·7	59·2	67·0	73	·486	58·31	139	

